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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,463	03/09/2004	Sui-Kay Wong	JETTA-004US	2396
7590	11/30/2004		EXAMINER	
Kevin J. McGough 714 Colorado Avenue Bridgeport, CT 06605			SALDANO, LISA M	
			ART UNIT	PAPER NUMBER
			3673	

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/796,463	WONG ET AL.
	Examiner Lisa M. Saldano	Art Unit 3673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 09 March 2004.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-44 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-44 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsman's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 7/28/2004.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7, 9-16 and 18-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Price et al (6,721,980) in view of Whipple, III et al (5,577,399) and Takach (1,282,980).

Regarding claims 1-5, 7, 12-16, 18-20, 25, 27-33, 36, 38, 39, Price et al discloses a force optimization surface apparatus and method. Price et al disclose a force optimization surface 10 comprising a support surface assembly that serves as an air mattress. The invention comprises inflatable chambers 46,48,50,52 that adapt to provide optimum contour for support of a user's body. The invention has a sensor layer 14 on the top of the mattress (see Figs.2-4) that serves as an electrically conductive sensing mat. Price et al disclose that the sensor layer 14 can be any material that provides multiple interface pressure sensors such as resistive or capacitive film providing a grid or matrix of interface sensors (see column 5, lines 62-68). The chambers are connected to an air supply 23 that functions as a reservoir and an air pump 31 for receiving and discharging fluid (see column 6, lines 49-67 and column 7). The invention further has a controller 18 with a smart board and software that functions as a microprocessor control to

receive input and output signals to transmit and discharge fluid from the chambers to the reservoir and vice versa to optimize the contours of the mattress relative to the user. Price et al disclose the use of air supply lines, air vent lines and valves.

Regarding claims 10-11, 21, 22, 34 and 35, Price et al disclose numerous covering that are capable of providing cushion (see Fig.3).

Regarding claims 23 and 24, Price et al disclose placement of the invention atop an articulated bed frame (see column 7, lines 63-67).

Regarding claims 26, 36 and 37, Price et al disclose that the software comprises preprogrammed set points (see Fig.6).

However, Price et al fail to disclose that the sensor mat comprises electrically conductive elastomeric membrane. Price et al also fail to disclose a pillow disposed on the mattress comprising inflatable compartments.

Whipple, III discloses a pressure sensor that includes a resistive elastomer that is disposed to form a diaphragm with electrodes.

It would have been obvious to one of ordinary skill in the art to modify the sensors of Price et al to include the pressure sensor technology comprising elastomers, as taught by Whipple, III et al because Price et al clearly disclose that any material that provides multiple interface pressure sensors such as resistive or capacitive film could be used. Whipple, III et al's sensor is a functional equivalent to the sensor disclosed by Price et al.

Regarding claims 1 and 9, Takach discloses pneumatic mattress comprising a mattress with a pillow 48 located on the top surface of the mattress. The pillow comprises one or more

inflatable compartments 46. Takach discloses that the compartments provide a complete mattress combined with a bolster or pillow.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the mattress of Price et al to include the pillow teaching of Takach because, as suggested by Takach, provision of the pillow makes for a more complete mattress.

3. Claims 6, 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Price et al, Whipple, III et al and Takach as applied to claims 1, 4 and 12 above, and further in view of Pepe (5,787,531).

Price et al, Whipple, III et al and Takach disclose the features described above.

However, Price et al, Whipple, III et al and Takach fail to disclose that the fluid is a liquid.

Pepe disclose an inflatable pad or mattress. Pepe discloses that the inflatable pad or mattress may comprise pressurized fluid such as air or a suitable liquid.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Price et al to comprise a liquid, as taught by Pepe, because both air and liquids are functional equivalents in terms of inflating a bladder.

4. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Price et al, Whipple, III et al and Takach as applied to claim 38 above, and further in view of Kotani et al (4,805,633).

Price et al, Whipple, III et al and Takach disclose the features described above. Price et al disclose the use of a pressure sensor in the invention.

However, Price et al, Whipple, III et al and Takach fail to disclose an induction system with coils as disclosed by the applicant.

Kotani et al disclose a displacement sensor comprising a sensor body 6, inductors 12, coil 11 and a processor circuit 15 (see column 2, lines 21-45). Kontani further discloses tuning the oscillation frequency of the system in developing the sensor (see column 5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Price et al to include the sensor teaching of Kotani because both inventions are directed to pressure sensors and their technologies are pertinent to the same objectives.

5. Claims 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Price et al, Whipple, III et al and Takach as applied to claim 38 above, and further in view of Newham (US2002/0070866)

Price et al, Whipple, III et al and Takach disclose the features described above. Price et al disclose the use of a pressure sensor in the invention. Price et al also disclose emergency alerts for a system at a nurse station (see column 12, lines 16-23). Price et al disclose that the sensor layer 14 can be any material that provides multiple interface pressure sensors such as resistive or capacitive film providing a grid or matrix of interface sensors (see column 5, lines 62-68).

However, Price et al, Whipple, III et al and Takach fail to disclose a capacitive array, oscillator, comparator/calibration logic circuit, and dielectric shift sensing mechanism.

Newham discloses a modular system for monitoring the presence of a person using a variety of sensing devices. Newham discloses a capacitive array housed in a polyester mat connected to a control module. Newham discloses that the control module supplies to the capacitive array a suitable oscillator drive current and senses values brought about by the presence of a user's body (see abstract). Newham discloses that the monitor/control comprises a power supply, drive/sensor circuit, a calibration/comparator logic circuit, a system interconnection integrity circuit and an alarm generation circuit.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the sensor, controller and alerts disclosures of Price et al to include the teachings of a variety of sensing devices and controlling parameters, as taught by Newham, because both inventions are pertinent to sensor technology and processor controls, particularly in the area of patient support. Furthermore, the integration of both the teachings provides a more versatile control system and sensor capability.

### *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Edgar et al (US2002/0039008A1), Viard (5,560,374) and Sato (4,542,547).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa M. Saldano whose telephone number is 703-605-1167. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather C. Shackelford can be reached on 703-308-2978. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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